



Environmental Compliance Consultation:

DOE PCB Questions and Answers — Part I

Office of Environmental Policy and Guidance, RCRA/CERCLA Division

DOE/EH-413-0003 (June 2000)

Summary

This *Environmental Compliance Consultation* consists of a collection of questions from the U.S. Department of Energy's (DOE) field sites which DOE's Office of Environmental Policy and Guidance (EH-413) answered with the help of the U.S. Environmental Protection Agency's (EPA) Office of Pollution Prevention and Toxics. These questions and answers were compiled in the year following the promulgation of the Polychlorinated Biphenyl (PCB) Disposal Amendments on June 29, 1998 at 63 FR 35384. They are published here to provide for clarifying PCB issues of significance to the field and to enable the sharing of information among field sites. The questions and answers fall into the following categories: concentration of PCBs, marking, storage, disposal, and other.

Concentration of PCBs

How is the concentration of PCBs for a sample determined from a gas chromatogram?

The areas under the peaks for each PCB congener in the gas chromatogram must be summed up to determine the total concentration of PCBs for the sample.

Marking

Do samples that are sent to a laboratory for analysis have to be marked in accordance with Subpart C?

If you know that the sample came from a PCB Article with a Mark M_L or from a source with a PCB concentration of ≥ 50 ppm of PCBs, you must mark the sample. Otherwise, the preamble to the PCB Notification and Manifesting Rule promulgated December 21, 1989 states [54 FR 52719] that samples sent for, being held for, or retained after analysis are exempt from regulation until the "analytical use" of the sample has termi-

nated. For example, termination may be interpreted as end of the court case in which the "analytical use" of the sample is for physical evidence. After the return of the sample to its source or declaration as PCB waste, the "analytical use" of the sample may also be considered terminated. The exemption from regulation of samples for "analytical use" under TSCA is analogous to that granted under RCRA and avoids the conundrum of having to establish the PCB concentration prior to having it analyzed for the PCB concentration.

Storage

If PCB/radioactive waste is characterized and the characterization shows that the waste is not radioactive, as originally presumed, when does the one-year storage clock start?

EPA defers to DOE for the determination of whether a waste is PCB/radioactive. If a PCB waste that was originally presumed radioactive is found not to be radioactive, the one-year clock starts on the date on which the determination was made that it was not radioactive.

Do laboratory trailers have to comply with 40 CFR 761.65(b) (especially, berm and containment) if they only perform analysis of waste samples?

According to the preamble to the PCB Notification and Manifesting Rule promulgated December 21, 1989 [54 FR 52719], laboratory samples, including that of waste, are not subject to regulation until their "analytical use" has terminated. The rationale is that it is not known whether PCBs are present until analyzed. Thus, laboratory samples are exempt from marking, storage, and manifesting requirements until their "analytical use" ends. [Once, that "analytical use" ends, and the samples have been determined to contain ≥ 50 ppm of PCBs, they are subject to regulation.] Usually laboratory

· samples are too small to cause concern about
· berms and containment for best management
· practices. However, the wastes generated
· from the analysis are not exempt. If the
· wastes are removed within 30 days of their
· generation, then the trailer is a considered
· temporary storage area, and the trailer needs
· to comply with whatever berm and contain-
· ment conditions have been established in the
· Spill Prevention, Control, and Countermea-
· sures Plan for liquid PCB wastes [40 CFR
· 761.65(c)(1)]. If PCB wastes are stored
· beyond 30 days in the trailer, the trailer needs
· to comply with the conditions for a 40 CFR
· 761.65(b) storage facility. Note that pliable,
· removable berms and containment pallets are
· available on the market.

· **Is there any cause for concern about the**
· **formation of polychlorinated dioxins and**
· **dibenzofurans during the storage of PCBs**
· **or the storage of chlorine near dioxins, and**
· **furans? Are polychlorinated dioxins and**
· **dibenzofurans regulated under TSCA?**

· No. Polychlorinated dioxins and
· dibenzofurans do not form from the presence
· of PCBs stored at room temperature in a
· normal atmosphere. Furthermore, polychlo-
· rinated dioxins and dibenzofurans do not
· form when dioxins and furans are stored in
· direct contact with chlorine. Polychlorinated
· dioxins and furans form as the products of
· the incomplete combustion of PCBs or during
· thermal treatment of certain organic com-
· pounds with chlorine (such as in paper and
· pulp mills). In addition, polychlorinated
· dioxins and dibenzofurans are not regulated
· under TSCA except for a requirement to test
· for these contaminants in certain chemicals to
· be manufactured and in approval of thermal
· PCB disposal processes (e.g., incineration).

· **Does PCB bulk product waste, which is**
· **essentially non-liquid PCBs, have to be**
· **stored in a facility in compliance with 40**
· **CFR 761.65(b) even though these regula-**
· **tions seem to emphasize requirements for**
· **storage of liquid PCB waste?**

· No. PCB bulk product waste may be stored
· for up to 30 days in a temporary storage area
· that complies with 40 CFR 761.65(c)(1) or up
· to 180 days in an on-site waste pile that

complies with 40 CFR 761.65(c)(9). If not in
either type of storage, PCB bulk product
waste must be stored in a facility that com-
plies with 40 CFR 761.65(b) even though
these regulations emphasize requirements for
storing liquid PCB waste. Commenters
during the PCB Disposal Amendments
rulemaking did not seek special relief for the
storage of PCB bulk product waste from the
requirements of 40 CFR 761.65(b). However,
in accordance with 40 CFR 761.62(c), a person
may request the EPA Regional Administrator
to grant a waiver from these requirements to
store PCB bulk product waste in a facility
with roof and walls but without containment.

**If a RCRA storage facility is used for storing
PCB waste, do the TSCA containment
requirements for general storage facilities
still apply?**

No. If a RCRA storage facility is used for
storing PCB waste as authorized under 40
CFR 761.65(b)(2), the TSCA containment
requirements [the larger of either (1) twice
the internal volume of the largest PCB Article
or Container or (2) 25% of the total internal
volume of all PCB Articles or Containers] do
not apply. Instead, the RCRA containment
requirements [the larger of either (1) the
internal volume of the largest article or
container or (2) 10% of the total internal
volume of all articles or containers] apply.

**If a RCRA-permitted tank is used for
storing PCB waste and there is a RCRA
Contingency Plan for the tank, is it still
necessary to prepare a Spill Prevention,
Control, and Countermeasures Plan (SPCC)
in accordance with 40 CFR 761.65(c)(7)(ii)?**

No. If a RCRA-permitted tank is used for
storing PCB waste as authorized under 40
CFR 761.65(b)(2), then the storer should
follow the RCRA (instead of TSCA) require-
ments for the tank. These requirements
include spill control. Thus, the RCRA re-
quirement for a Contingency Plan would take
the place of the TSCA requirement for an
SPCC Plan.

· **What is the purpose of reserving space**
· **inside a 40 CFR 761.65(b) - compliant**
· **storage facility when storing outside the**
· **facility palletized, undrained: (1) PCB**
· **Large High Voltage Capacitors and (2) PCB-**
· **Contaminated Electrical Equipment?**

· 40 CFR 761.65(c)(2) requires that the space
· reserved inside a 40 CFR 761.65(b) - compli-
· ant storage facility be equal to at least 10% of
· the volume of the undrained PCB Large High
· Voltage Capacitors and undrained PCB-
· Contaminated Electrical Equipment, stored
· on pallets outside the facility. The purpose is
· to provide space in the event that a leak is
· discovered in such a PCB Article so that the
· article can be moved inside to contain the
· leak and prevent dispersal by wind and
· precipitation. Usually, PCB Large High
· Voltage Capacitors and PCB-Contaminated
· Electrical Equipment are too large to fit into a
· salvage drum or overpack if found leaking.
· The purpose is not to ensure that all 90% of
· the inside storage space is used up before
· outside storage may occur.

· **40 CFR 761.65(c)(2) states that palletized,**
· **undrained (1) PCB Large High Voltage**
· **Capacitors and (2) PCB-Contaminated**
· **Electrical Equipment may be stored next to**
· **(i.e., outside) a 40 CFR 761.65(b) - compliant**
· **storage facility. How far away from the**
· **facility may storage occur?**

· The regulations do not say. Nevertheless, the
· storage should be as close as reasonably
· possible to the 40 CFR 761.65(b) - compliant
· storage facility in order to facilitate move-
· ment of any articles from the outside into the
· interior of the facility in the event of a leak.
· At the Ross Hazardous Materials Complex
· (Bonneville Power Administration), the most
· common cause for a leak is occasional
· vandals shooting at articles stored outside.

· **40 CFR 761.65(c)(5) states that spills in**
· **storage areas shall be cleaned up using**
· **761.61. Is there any reason why Subpart G,**
· **“PCB Spill Cleanup Policy” cannot be used**
· **any more for clean up of spills in storage**
· **areas?**

· No. At the time of the PCB Disposal Amend-
· ments, EPA believed that cleanup of spills in
· storage areas under the provision for
· remediation waste available at 40 CFR 761.61

provided greater flexibility than Subpart G.
Consequently, the reference to 40 CFR 761.61
was incorporated into 40 CFR 761.65(c)(5).
However, Subpart G may still be used to
clean up a spill in general storage areas [40
CFR 761.65(b)(1)] if the cleanup occurs within
72 hours of the spill.

Do the requirements for a SPCC Plan apply
even if the storage of bulk liquid PCB waste
takes place remote from any surface water?

Yes. The requirement [40 CFR 761.65(c)(7)] to
prepare a Spill Prevention, Control, and
Countermeasures Plan (SPCC) applies
regardless of the proximity of the bulk liquid
PCB waste storage site to surface water and
aridity of the site. Although the Clean Water
Act mandates SPCC Plans in the context of
around or adjacent to surface water, the
TSCA regulation makes an unconditional
mandate about preparing an SPCC Plan for a
bulk storage site. The TSCA regulation does
not make the preparation of an SPCC Plan
contingent upon the site being around or
adjacent to surface water.

Does the RCRA “First-In/First-Out” require-
ments apply to liquid PCBs stored for
disposal?

Yes. The “First In/First Out” requirements
comprise the mechanism EPA uses to enforce
the one-year storage limit on liquid PCBs
stored typically in bulk containers (tanks,
portable tanks, tank cars, and tankers) for
disposal. Records (e.g., a log book) must be
kept showing the date and quantity of each
batch of PCBs added to a container and the
date, quantity, and disposition of each batch
of PCBs [40 CFR 761.65(c)(8)]. The require-
ments are basically as follows: the total
quantity of PCBs removed must be equal to
or greater than the total quantity of PCBs
added to the container over any one-year
period. These requirements are contained in
EPA’s TSCA PCB Policy 6-PCB-10 dated
August 13, 1985.

Is the storage for disposal of drained PCB/ radioactive hydraulic machines contaminated with < 500 ppm of PCBs regulated?

No. The technical corrections to the PCB Disposal Amendments [64 FR 33761 of June 24, 1999] provide that storage for disposal of PCB-Contaminated Articles from which all free-flowing liquid has been removed is not regulated in accordance with 40 CFR 761.60(b)(6)(ii)(B). Even if it were still subject to Subpart D, the storage of PCB/radioactive waste in a TSCA or RCRA storage facility, is exempt from the one-year storage limit as long as the facility can show that attempts to secure disposal are futile (because of the lack of disposal capacity). Notwithstanding, be aware that the PCB concentration in fluids used in hydraulic and heat transfer machines had to be reduced to < 50 ppm by July 1, 1984, unless otherwise stipulated in a compliance agreement with an EPA Region.

What happens to PCB bulk product waste after it has been stored 180 days in a waste pile in compliance with 40 CFR 761.65(c)(9)?

Storage in such a waste pile is allowed for 180 days maximum under 40 CFR 761.65(c)(9). No more accommodation in any form of temporary storage is permissible. The temporary storage provision at 40 CFR 761.65(c)(1) may be invoked only for the first 30 days from the start of waste generation. Therefore, the waste from the 180-day waste pile may not be moved to temporary storage. After 180 days, the waste must either be (i) disposed, (ii) stored in a facility meeting the more rigorous requirements of 40 CFR 761.65(b), (iii) covered under PCB Disposal Approval for continued storage in the waste pile, or (iv) covered under a risk-based storage approval for PCB bulk product waste obtained in accordance with 40 CFR 761.62(c).

Disposal

What is the category of PCBs for sludge found in a sump or sewer drain?

PCB waste consisting of sludge found in a sump or sewer drain is considered to be PCB remediation waste. If the sludge meets the definition of a non-liquid PCB [40 CFR 761.3], it may be categorized as bulk PCB remediation waste, a subset of PCB remediation waste..

Does the Anti-Dilution rule apply to multi-phasic PCB remediation waste?

No. Remediation waste, under TSCA, is any non-liquid material contaminated with liquid or non-liquid PCBs as the result of a spill or release. The Anti-Dilution rule [40 CFR 761.1(b)(5)] does not apply to such waste. PCBs in remediation waste may be disposed of at the concentration found in each single, separated phase. On the other hand, the Anti-Dilution rule applies to PCBs coming out of use for disposal, usually a piece of equipment, such as a transformer. This means that such waste must be disposed of at the highest PCB concentration of all phases. If a PCB Article is found at a remediation waste site, the PCB Article is disposed not as remediation waste, but rather, in accordance with the appropriate section in 40 CFR 761.60(b) [e.g., 761.60(b)(1) for transformers].

May personal protective equipment (PPE) used during a cleanup of PCBs under Subpart G, "Spill Cleanup Policy," be disposed in an ordinary landfill under the new provision at 40 CFR 761.61(a)(5)(v)(A) for cleanup wastes?

No. PPE and cleanup wastes from a cleanup of PCBs under Subpart G, "Spill Cleanup Policy," may NOT be disposed in an ordinary landfill. It must be disposed in a TSCA chemical waste landfill or a TSCA incinerator. Even though 40 CFR 761.61(a)(5)(v)(A) is intended for PPE and cleanup wastes, this provision limits disposal of PPE and cleanup wastes in ordinary landfills to that coming from site cleanups conducted under 40 CFR

· 761.61(a). Portions of 40 CFR 761.61(a) may
· not be mixed with Subpart G because there
· are different consequences associated with
· each. The two most important consequences
· are the Anti-Dilution Rule and preemption
· against enforcement actions. The Anti-
· Dilution Rule applies under Subpart G;
· therefore, all cleanup wastes, including PPE,
· **must** be regarded at the same concentration
· as the original source of the spill and dis-
· posed accordingly. In addition, EPA has a
· policy that cleanups conducted under Subpart
· G preempt enforcement actions on the part of
· the agency. On the other hand, the Anti-
· Dilution Rule does not apply to cleanups
· under 40 CFR 761.61(a); all cleanup wastes
· **may** be regarded at their as-found concentra-
· tions. There is no preemption against en-
· forcement actions taken by EPA associated
· with the cleanups conducted under 40 CFR
· 761.61(a).

· **How may soil contaminated with PCB,**
· **radioactive, and RCRA hazardous waste**
· **already existing in piles on June 29, 1998 be**
· **disposed off-site?**

· Whether the PCBs are present < 50 ppm or
· ≥50 ppm in the waste is important. You may
· use 40 CFR 761.61(a)(5)(i)(B)(2)(i), which
· refers you to the procedures given at 761.283,
· 761.286, and 761.292, to determine whether
· PCBs are < 50 ppm or ≥50 ppm. If these
· procedures are not suitable, you may apply to
· EPA for a risk-based approval of an alterna-
· tive statistical sampling scheme under 40 CFR
· 761.61(c). Because this waste is PCB/radio-
· active remediation waste, you may use the as-
· found – instead of the original source –
· concentration of PCBs [see the answer to the
· question, “*Should PCB/radioactive remediation*
· *waste be characterized based on the source con-*
· *centration or the as-found concentration?*” in EPA’s
· *1999 PCB Questions and Answers Manual, Part*
· *2*]. Thus, the soil laden with PCBs < 50 ppm,
· radioactive, and RCRA hazardous waste may
· go into a mixed waste (radioactive and
· hazardous waste) landfill or any facility
· approved to dispose of the radioactive
· content of the waste [see 40 CFR 761.50
· (b)(7)]. You have to notify both EPA per 40
· CFR 761.61(a)(3) and the landfill per 40 CFR
· 761.61(a)(5)(i)(B)(2)(iv).

In lieu of testing, you may also presume PCBs
≥50 ppm. If the soil is tested, known, or
presumed to be ≥50 ppm of PCBs, you may
then self-implement disposal of the waste as
PCB remediation waste, paying particular
attention to 40 CFR 761.61(a)(5)(i)(B)(2)(iii).
You must notify both the EPA Region in
accordance with 40 CFR 761.61(a)(3) and
landfill (if not possessing a TSCA approval) in
accordance with 40 CFR 761.61(a)(5)(i)(B)(2)(iv).
You **must** dispose the soil in a mixed waste
landfill that accepts PCB waste. The landfill
may be a TSCA chemical waste landfill, a
RCRA hazardous waste landfill, or any TSCA
approved facility for the waste.

**From where did the six “nines” come for the
destruction and removal efficiency of PCBs?**

The six “nines” refers to the destruction and
removal efficiency (DRE) of 99.9999% for
incineration of PCBs. 40 CFR 761.70(b)
specifies a threshold of “mass air emissions
being no more than 0.001 g/kg of non-liquid
PCB introduced,” which translates into a
millionth or a DRE of 99.9999% for non-liquid
PCBs. This DRE of six nines for non-liquid
PCBs has been in place without change since
the very first PCB disposal regulations were
proposed on May 24, 1977. EPA’s test data
for incineration of liquids indicated that
when an incinerator operates at the condi-
tions specified in 40 CFR 761.70(a), a DRE of
six nines is met, and it is not necessary for the
additional condition to be imposed for liquid
PCBs. EPA did not have sufficient data to
make a similar finding for non-liquids. EPA’s
Guidance on Remedial Actions for Superfund
Sites With PCB Contamination specifies a DRE
of 99.9999% for PCBs, without regard to
liquids or non-liquids. While EPA has
adopted a policy of a 99.9999% DRE
(regardless of whether liquid or non-liquid),
as reflected in its guidance, EPA can
legally strictly enforce this DRE for only
non-liquid PCBs.

. **40 CFR 761.62(d)(2) states that bulk product**
. **waste leaching < 10 µg of PCBs/L may be**
. **disposed underneath asphalt roadbed.**
. **May the roadbed be concrete instead**
. **of asphalt?**
. .

. During the rulemaking for the PCB Disposal
. Amendments, a commenter specifically
. requested disposal underneath asphalt
. roadbed. The request was accommodated by
. the specification of asphalt in 761.62(d)(2).
. EPA has stated that there is no reason why
. concrete may not be used in place of asphalt
. for roadbed. Nevertheless, EPA also cautions
. that this particular provision is being pro-
. tested and may be withdrawn in the future as
. the result of litigation.
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Other

Do findings of PCBs bioassayed in trapped animals have to be reported to EPA?

No. There is no requirement in 40 CFR Part 761 to report findings of PCBs bioassayed in trapped animals. However, be advised that animals analyzed to have PCBs may be disposed in a solid waste landfill as waste from research and development activities under 40 CFR 761.64(b)(2).

Questions of policy or questions requiring policy decisions will not be addressed in EH-413 Environmental Compliance Consultations unless that policy has already been established through appropriate documentation. Please refer any questions concerning the material covered herein to Beverly Whitehead, EH-413, (202) 586-6073.



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